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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/648,277

Filing Date: August 27, 2003

Appellant(s): TSUTSUMI ET AL.

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Eric S. Barr  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 26, 2009 appealing from the Office action mailed October 27, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2002/0025810	TAKAYAMA	2-2002
2001/0046879	SCHRAMM	11-2001
6,393,282	IIMORI	5-2002
5,864,578	YUEN	1-1999
2003/0123405	DEL PRADO	7-2003
2004/0063426	HUNKELER	4-2004

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 1-3, 6, 12, 15-17, 20, 28, and 29** rejected under 35 U.S.C. 102(e) as being anticipated by Takayama et al (United States Patent Application Publication US 2002/0025810 A1), hereinafter Takayama.

**Regarding Claim 1**, Takayama discloses a structure wherein a mobile terminal, while communicating with an access point, serving as a parent station, over a wireless LAN, can be quickly switched from the parent station to an adjacent access point having an overlapping communication range (As shown in Fig: 1 in a high speed roaming, Station 3 moves from one AP to another AP, paragraph 0032); wherein the access point (Fig: 2) comprises: a wireless LAN interface for communicating with the mobile terminal over the wireless LAN (Figure 2, 22; paragraph 0037), a roaming unit for performing a roaming operation (Figure 2, 24; paragraph 0039), a beacon transmitter for transmitting a beacon signal to provide synchronization with the mobile terminal (paragraph 0052), and a data transmitter (Figure 2, 22) for transmitting access point data required for the roaming operation (paragraph 0042). **Further regarding Claims 1**

**and 15**, Takayama discloses a mobile terminal comprising a wireless LAN interface (Figure 3, 32) and a CPU that scans and monitors beacons for peripheral access point data for storage in a database (paragraphs 0077-0081). When the beacon quality of the current subscription drops below a threshold value, the mobile station looks in the database to find the access point having the best radio environment (Figure 8; paragraph 0081).

**Regarding Claims 2 and 16**, Takayama discloses selection of the best radio environment once the RSSI value for a beacon of the currently subscribed access point drops below a threshold value (paragraph 0081).

**Regarding Claims 3 and 17**, Takayama discloses monitoring beacon levels for peripheral access points, storing the related data in a database, and connecting to the best communication environment once the RSSI value for a beacon of the currently subscribed access point drops below a threshold value (paragraph 0081).

**Regarding Claims 6 and 20**, Takayama discloses the mobile station receiving a RSSI value (known in the art as a ratio indicating signal strength) and basing roaming decisions on said received value (paragraphs 0077 and 0081).

**Regarding Claim 12**, Takayama discloses a master parent station periodically broadcasting a beacon reference signal comprising a time synchronization function to other access points, which serves to synchronize the access points (paragraph 0047). Takayama further discloses a backup capability wherein a slave access point can act as a master should a broadcast message not be received within a certain period of time (paragraph 0057). Therefore, when the master station is not able to send out its radio beacon containing hop information to the

mobile terminal, another access point will be able to send this beacon without overlapping with another access point (Figure 8; paragraph 0077).

**Regarding Claims 28 and 29,** Takayama discloses obtaining access point data from the peripheral connectable access points (paragraphs 0077-0081).

**Claims 5 and 19** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Schramm et al (United States Patent Application Publication US 2001/0046879 A1), hereinafter Schramm. Takayama discloses all of the limitations of Claims 2 and 16, as described above. Takayama further discloses sending a beacon from an access point to a mobile terminal (paragraphs 0077 and 0081). However, Takayama may not disclose an access point transmitting an error ratio of data to a mobile terminal, wherein the mobile terminal stores the received error ratio. In the same field of endeavor, Schramm discloses a mobile terminal measuring link quality on for base station candidates, including a raw BER estimate on a traffic channel (paragraph 0039) and selecting a station based on the best quality of service observed (Figure 3a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the BER estimation with the beacon transmission disclosed in Takayama in order to assess cell capabilities when making a handover in evolved wireless networks.

**Claims 8, 9, 22, and 23** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Iimori (United States Patent 6,393,282).

**Regarding Claims 8 and 22,** Takayama discloses all of the limitations of Claims 1 and 15, as described above. Further, Takayama discloses storing a received RSSI value in a database on a mobile terminal, as described with regards to Claim 3. The received levels are compared among RSSI values sequentially received from neighboring access points (paragraph 0052).

However, Takayama may not disclose a counter for counting the times for comparison or a roaming start instruction comprising the reception level being continuously lowered by a number that matches a predetermined count. In the same field of endeavor, Iimori discloses both counting the number of times a priority search is performed, wherein base stations are compared against one another for handoff, as well as decreasing a reception level by 1dB each time the search is performed (column 13, lines 14-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the counter and roaming start instruction disclosed in Iimori with the mobile station disclosed in Takayama in order to search for a base station according to a mobile station state and lengthen the mobile station battery life.

**Regarding Claims 9 and 23,** Iimori further discloses the mobile station sensing a received electric-field strength level. If the received level for a neighbor base station is equal or higher than a preset determination level, then handover is initiated (column 9, line 57 – column 10, line 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the handover initiation Iimori with the mobile station disclosed in Takayama in order to search for a base station according mobile station state and lengthen the mobile station battery life.

**Claims 10 and 24** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Yuen (United States Patent 5,864,578). Takayama discloses all of the limitations of Claims 1 and 15, as described above. Takayama further discloses sending a beacon from an access point to a mobile terminal (paragraphs 0077 and 0081). However, Takayama may not disclose extracting an error ration included in a beacon signal and initiating a roaming operation when the error ration is larger than a predetermined error ration. In the same field of endeavor,

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Yuen discloses handoff initiation based on a high probability of error (column 20, lines 47-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the handoff initiation disclosed in Yuen with the beacon transmission disclosed in Takayama in order to provide handoff between two base stations without interrupting communications between a mobile terminal and the base stations.

**Claims 11 and 25** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of del Prado et al (United States Patent Application Publication US 2003/0123405 A1), hereinafter del Prado. Takayama discloses all of the limitations of Claims 1 and 15, as described above. However, Takayama may not disclose the mobile terminal obtaining the end time of a contention-free period, included in a beacon signal and a probe response and searching for base stations except when data are transmitted and received, after the contention-free period is over. In the same field of endeavor, del Prado discloses a 802/11 point coordination function (PCF) that defines the start and end of a contention-free period via a beacon frame and a CF-End frame sent by the access point (paragraph 003). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the contention-free period disclosed in del Prado with the access point search disclosed in Takayama in order to avoid potential collisions in overlapping basic service sets.

**Claims 13, 14, 26, and 27** rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama in view of Hunkeler (United States Patent Application Publication US 2004/0063426 A1).

**Regarding Claims 13 and 26,** Takayama discloses all of the limitations of Claim 12, as described above. Takayama further discloses passive scanning (paragraph 0009) and a beacon

table for storing received RSSI values. However, Takayama may not disclose the passive scanner at the time recorded in the beacon table, excluding the time whereat the mobile terminal is transmitting and receiving data. In the same field of endeavor, Hunkeler discloses a handset performing passive scanning by listening to available beacons (paragraph 0004). Further, the conventional beacon contains a timestamp (paragraph 0003), thus the scanning is performed at the time recorded in the beacon and not when the handset is transmitting and receiving data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the passive scanning disclosed in Hunkeler with the scanning disclosed in Takayama in order to broadcast information necessary for handover in WLAN systems.

**Regarding Claims 14 and 27,** Takayama discloses performing active scanning in the event that passive scanning does not obtain an access point (paragraph 0009). However, Takayama may not disclose an active scanner for examining an access point from which a response is received. In the same field of endeavor, Hunkeler discloses a probe-response mechanism for active scanning in WLANs (paragraph 0004). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the active scanning disclosed in Hunkeler with the scanning disclosed in Takayama in order to broadcast information necessary for handover in WLAN systems.

#### **(10) Response to Argument**

Appellant's arguments regarding the claim limitations of "an access point search unit for searching for peripheral connectable access points and for obtaining access point data" and "an access point data table in which the access point data detected and obtained by the access point search unit are recorded" have been fully considered but they are not persuasive. Per MPEP

2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily)." Takayama discloses a mobile terminal comprising a wireless LAN interface (Figure 3, 32) and a CPU that scans and monitors beacons for peripheral access point data for storage in a database (paragraphs 0077-0081) and the station entering "into the access point having the maximum RSSI at the rising time by the normal scanning" (paragraph 0077). Given its broadest reasonable interpretation, the step of "searching for peripheral connectable access points" is taught by the scanning operation, wherein the station downloads radio information associated with each of the access points and determines which one to connect to, as disclosed by Takayama. Further, the access point data, which comprises information regarding up to four access points (paragraph 0077), is downloaded by the station from the access point found during the scanning operation (paragraphs 0009, 0010, 0055, and 0077). Further, the CPU in the mobile station is capable of searching the memory in which the access point data is received to check that hopping information of registered neighboring access points are saved and registered (paragraph 0080). Examiner submits that the claim term "access point data" in the claim language is not further defined to include or exclude certain types of information, nor is the claim term "obtaining" further defined to include or exclude steps such as the disclosed scanning and downloading. Therefore, given its broadest reasonable interpretation, the hopping information downloaded

from the access points by the mobile station, as described in paragraphs 0077-0081 of Takayama, discloses the claim limitation of "an access point search unit...for obtaining access point data." Lastly, the hopping information associated with each of the access points is stored in memory by the station (paragraphs 0079 and 0080), along with "radio situation" data associated with each access point stored in a database (paragraph 0081). Examiner submits that the claim term "access point data" in the claim language is not further defined to include or exclude certain types of information, nor are the claim terms "obtaining" or "detected" further defined to include or exclude steps such as the disclosed scanning and downloading. Therefore, given its broadest reasonable interpretation, Examiner submits that the disclosed *memory* that stores hopping information associated with registered neighboring access points (paragraph 0080) and "grasp(ing) the latest radio situation of the neighboring access point into which the station is entered subsequently and also *forms the information as the database*" (paragraph 0081) teaches the claim limitation of "an access point data table in which the access point data detected and obtained by the access point search unit are recorded" (emphasis added by Examiner).

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/A. C./

Examiner, Art Unit 2416

8/26/2009

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